

WHAT IS CLAIMED IS:

1. A method for detecting the presence of an invasive mold in a subject comprising identifying 5.8S ribosomal RNA of an invasive mold, or a DNA encoding said RNA in a sample obtained from the subject.
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2. The method of claim 1, comprising mixing the sample with primers that hybridize to the RNA.
- 10 3. The method of claim 2, further comprising amplifying the sample comprising the RNA.
- 15 4. The method of claim 3, comprising determining the presence or absence of an amplification product in the sample wherein the presence of an amplification product is indicative of the presence of an invasive mold.
5. The method of claim 1, wherein the sample is a nucleic- acid containing sample
- 20 6. The method of claim 5, wherein the nucleic- acid containing sample is a DNA sample.
7. The method of claim 5, wherein the nucleic- acid containing sample is a RNA sample.
- 25 8. The method of claim 4, further comprising quantitating the amplification product whereby the amount of invasive mold nucleic acid is quantitated.
9. The method of claim 8, wherein said quantitating comprises:
30 a) mixing a first probe capable of hybridizing to a nucleic acid sequence of said invasive mold in an amplification reaction;

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b) mixing a second probe capable of hybridizing to a standard nucleic acid that is amplified to a pre-determined quantity in the amplification reaction of step (a); and

c) comparing the amount of the first probe to the amount of the second probe.

10. The method of claim 9, wherein the mixing is in the linear phase of the amplification.

15. 11. The method of claim 9, wherein the first probe comprises nucleic acids that hybridize to the nucleic acid sequence of SEQ ID NO:1, SEQ ID NO:5 or SEQ ID NO:6 or fragments thereof.

20. 12. The method of claim 11, wherein the probe comprises the sequence 5'-TGAAGAACGCAGCGAAATGCGATAA-3' (SEQ ID. NO:4).

25. 13. The method of claim 9, wherein said probe is labeled.

14. The method of claim 13, wherein the label is a fluorescent label.

15. The method of claim 14, wherein said fluorescent label is 6-carboxyfluorescein (FAM), 6-carboxy-N,N,N',N'-tetramethylrhodamine (TAMRA), Alexa 350, Alexa 430, AMCA, BODIPY 630/650, BODIPY 650/665, BODIPY-FL, BODIPY-R6G, BODIPY-TMR, BODIPY-TRX, Cascade Blue, Cy3, Cy5,6-FAM, Fluorescein, HEX, 6-JOE, Oregon Green 488, Oregon Green 500, Oregon Green 514, Pacific Blue, REG, Rhodamine Green, Rhodamine Red, ROX, TAMRA, TET, or Texas Red.

30. 16. The method of claim 15, wherein the probe comprises the sequence 5'-6-FAM-TGAAGAACGCAGCGAAATGCGATAA-TAMRA-3' (SEQ ID NO:4).

17. The method of claim 3, wherein the amplifying is preceded by a reverse transcription reaction.
18. The method of claim 1, wherein the invasive mold belongs to *Aspergillus* species, *Fusarium* species, or *Scedosporium* species.
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19. The method of claim 18, wherein said mold is of the *Aspergillus* species.
20. The method of claim 19, wherein said mold is *Aspergillus fumigatus*, *Aspergillus flavus*, *Aspergillus terreus*, *Aspergillus vesicularis*, *Aspergillus nidulans*, or
10 *Aspergillus niger*.
21. The method of claim 18, wherein said invasive mold is of the *Fusarium* species.
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22. The method of claim 21, wherein said mold is *Fusarium solani*.
23. The method of claim 18, wherein said invasive mold is of the *Scedosporium* species.
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24. The method of claim 23, wherein said invasive mold is *Scedosporium prolificans*.
25. The method of claim 1, where said sample comprises serum, blood, plasma, cells, tissues, aspirates, biopsies, fine needle aspirates, skin biopsies, lymph fluid or urine.
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26. The method of claim 1, where said sample comprises serum.
27. The method of claim 2, wherein said primers are comprised of nucleic acids that hybridize to the nucleic acid sequence comprised in SEQ ID NO: 1 or fragments thereof.
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28. The method of claim 27, wherein said primers comprise the nucleic acid sequence TTGGTTCCGGCATCGA (SEQ ID. NO:2) or GCAGCAATGACCGCTCGG (SEQ ID. NO:3).
- 5 29. The method of claim 2, wherein said primers are comprised of nucleic acids that hybridize to the nucleic acid sequence comprised in SEQ ID NO: 5 or fragments thereof.
- 10 30. The method of claim 2, wherein said primers are comprised of nucleic acids that hybridize to the nucleic acid sequence comprised in SEQ ID NO: 6 or fragments thereof.
- 15 31. The method of claim 3, wherein said amplifying is by polymerase chain reaction (PCRTM).
32. The method of claim 4, wherein said determining is in real time.
33. The method of claim 1, wherein the detecting is in a detection range of 200 fg to 20 ng of DNA.
- 20 34. The method of claim 1, further comprising obtaining said sample from the subject.
35. The method of claim 1, further comprising isolating nucleic acids from said sample.
- 25 36. A kit for detecting an invasive mold in a biological sample comprising:
a) primers that hybridize to 5.8S ribosomal RNA of an invasive mold, or DNA encoding said RNA; and

- b) reagents for an amplification reaction comprising a heat-stable DNA polymerase enzyme, buffers, water, magnesium chloride, and deoxynucleotides;
- each enclosed in a suitable container means.

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37. The kit of claim 36, wherein the primers comprise nucleic acids to the nucleic acid sequence of SEQ ID NO:1, SEQ ID NO:5 or SEQ ID NO:6 or fragments thereof.
- 10 38. The kit of claim 36, wherein the primers comprise the nucleic acid sequence TTGGTTCCGGCATCGA (SEQ ID. NO:2) or GCAGCAATGACGCTCGG (SEQ ID. NO:3).
- 15 39. The kit of claim 36, further comprising one or more probe that hybridize to ribosomal RNA of the invasive mold or fragments thereof.
40. The kit of claim 39, wherein the ribosomal RNA comprises one or more probe that hybridize to the 5.8S ribosomal RNA of the invasive mold or fragments thereof.
- 20 41. The kit of claim 39, wherein said probes comprise nucleic acids that hybridize to the nucleic acid sequence of SEQ ID NO:1, SEQ ID NO:5 or SEQ ID NO:6 or fragments thereof.
- 25 42. The kit of claim 41, wherein the probe comprises the sequence 5'-TGAAGAACCGCAGCGAAATGCGATAA-3' (SEQ ID. NO:4).
43. The kit of claim 39, wherein said probe is labeled.
- 30 44. The kit of claim 36, further comprising reagents to isolate nucleic acids from the sample.

45. The kit of claim 44, wherein said nucleic acid isolated is mRNA.

46. The kit of claim 44, wherein said nucleic acid isolated is DNA.